YBA Heritage CD100

CD PLAYER/DAC

Visit your local audio store and you might be surprised that if you're planning on buying a CD player your choices are going to be fairly limited. Building CD players is a high-tech pursuit, not least because of the need to be able to build highly complex laser CD assemblies and most of the companies with the technology and finances to build CD transports are instead building mobile phones and tablets (because it's far more profitable!).

So I was pleased to find that YBA's Heritage CD100 CD player is now available in Australia through Melbourne distributor Audio Heaven, whose PR person, Annabelle Johnstone, was more than happy to loan me one for this review.

As for the YBA brand itself, the company was founded by Yves-Bernard André in France, but is now owned by Chinese high-end manufacturer Shanling, which manufactures the Heritage CD100 in its factories in China.

THE EQUIPMENT

On unpacking the CD100 I was surprised to find that it didn't look like the Heritage CD100 models I'd seen when I was in the US last year, because whereas those models had used a slot-loading CD mechanism, the CD100 sent to me by Audio Heaven had a standard CD tray. Not that I was complaining, mind you… I'll take a tray-loader over a slot-loader any day! According to YBA's CEO, Jackie Pugh, the reason for the change from a slot-loading mechanism to a standard CD tray was to improve sound quality. '*After a couple of months of testing, the decision was made to change from a slot loader to a tray for sonic reasons. We believe the quality has improved as a result of this change. Everything else in the player remained the same,*' she told me.

This change from slot-loading to tray-loading did upset one aspect of the CD100's design that I'd previously thought was incredibly clever, and more than a bit elegant. As you can see from the photograph, the centre of the (very thick!) aluminium front panel is bisected by a triangular groove. In the original slot-loading design, the disc loader was effectively hidden from sight inside this groove, which gave the front panel a sophisticated ultra-clean look completely unlike that of most other CD players. In this new tray-load implementation, the groove now bisects the front panel of the tray… rather awkwardly in my opinion.

To my mind, it would have looked better if YBA had dropped the tray lower down in the front panel, so the top part of the groove was incised in the front panel, and the bottom part of the groove was incised at the top of the tray.

What hasn't changed are the very unusual CD transport controls—they're toggle switches. I have no idea why Yves-Bernard André chose to specify these rather than the more usual pushbuttons, but after a short while I quite grew to like them. First, they're quirky and different, and to my mind, that's a great thing in this increasingly bland and homogenised world. Second, I found them incredibly satisfying to use. Whenever I wanted to skip a track, it simply felt so much better to flick a spring-loaded switch up or down than press a button. The same was true whenever I wanted to pause then re-start play (which I do often when reviewing, because I like to pause the music whenever I write something in my auditioning notes). Pressing the play pause button down to pause play, then down again to re-start, felt totally different and really satisfying.

Eagle-eyed readers may have noticed that there is no 'Eject' toggle. The answer to this mystery is that you use the 'Stop/Play/Pause' toggle switch to eject a CD. You lift it up to stop playback then up again to cause the tray to open. (Interestingly, all four toggle switches have a third mode, where you can push the toggle inwards, but this didn't have any effect that I could see). As for the two remaining toggle switches, the left-most one says it's 'On/Off' but it's actually an 'On/Standby' switch: the main 240V a.c. power on/off switch is a two-way rocker switch that's concealed on the bottom of the player. If you reach underneath the left of the front panel, you'll find it easily. The right-most toggle switch (labelled SRC, short for Sampling Rate Converter) activates the CD100's upsampling circuitry, which upsamples digital data to 192kHz before D–A conversion, either from the CD or from an external digital input (about which more later). Active upsampling circuitry is indicated by small green '192k' lettering appearing in the front panel display, whose primary colours are a rather tasteful and discreet burnt-orange and black.

You don't need to be eagle-eyed to see that the YBA CD100 lacks a headphone socket. Personally, I feel this is an oversight, but I guess if you don't use headphones, or your amplifier has a headphone socket, you'll never miss it.

Check out the rear panel and you'll find fully-differential balanced output via XLR sockets (more about this in moment), ordinary unbalanced outputs via RCA terminals, a coaxial digital output (handy if you want to use the CD100 as a transport, with an external DAC), a coaxial digital input (so you could use the CD100 as a DAC with an external CD transport, or an older CD player) and a Type B USB input, giving the CD100 a computer interface, so you can use it to play files stored on your computer. There's also an 'upgrade port' whose purpose remains mysterious: The manual merely says '*For service and future improvements. Not for use by end-users.*'

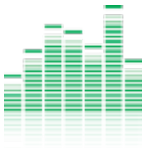
The remote control is fairly large (it measures 238×40×22mm) and powered by two easily accessible AA batteries. (Although YBA fits high-quality German-made Varta carbon batteries, I'd recommend swapping these out and replacing them with Alkaline or Lithium types.) Although it has twenty buttons, most of these are used to operate other YBA components: only seven of them can be used to control the CD100. In addition to the usual CD transport controls (fast forward/fast back), track skip (forward/back), play/pause/stop etc, you also get a 'Random' mode so a CD's tracks will be played back in random order (I suspect that musicians loathe this control, since they want you to play back the tracks on their CDs in the order they carefully recorded them). The remote also affords the ability to dim the display or alternate the display between showing the elapsed track time and the remaining track time (via the 'View' button). You can also cause the CD100 to repeat a track, or repeat an entire disc.

The Owners' Manual supplied with our review sample said (on page 7) that the remote's volume control could be used to control the volume of the analogue output stage of the CD100 and that the 'Audio' button toggled between fixed and variable output. Initially, the only thing I could do with the 'Audio' button was toggle between SRC on and SRC off (which isn't mentioned the manual at all), but an email exchange with Craig Johnstone, of Audio Heaven, revealed that in order to switch the volume control circuit on, I had to press and hold the 'Audio' button down until the words 'Volume Off' showed in the LED display. I then had to press the button again to select 'On' after which the output voltage of both analogue outputs (both balanced and unbalanced) can be adjusted (between 0 and –80dB). This worked well, although the speed it takes to adjust the volume is very slow: 19 seconds to go between 0 and –80dB. Hopefully YBA will amend the manual with clearer instructions for owners.

Whatever you do, do not lose the remote control, because using its 'Source' button is the only way you will be able to select the CD100's digital coaxial input and its USB input. (To my mind, YBA should add a source switch to the CD100's front panel to reduce this absolute reliance on the remote for these functions.) And, of course, it's also the only way of adjusting the CD100's output level.

YBA
HERITAGE CD100 CD PLAYER/DAC

Brand: YBA
Model: Heritage CD100
Category: CD Player/DAC
RRP: $1,545
Warranty: Three Years
Distributor: Audio Heaven
Address: Keys Road
Keysborough VIC 3173
(04) 1855 2051
info@audioheaven.com.au
www.audioheaven.com.au



- French design chic
- Shanling build quality
- Excellent sound

- Headphone output
- Remote-only source switching
- Direct track access

LAB REPORT

Readers interested in a full technical appraisal of the performance of the YBA Design Heritage CD100 CD Player should continue on and read the LABORATORY REPORT published on page 36. Readers should note that the results mentioned in the report, tabulated in performance charts and/or displayed using graphs and/or photographs should be construed as applying only to the specific sample tested.

Lab Report on page 36

Internally, YBA's Heritage CD100 uses a Wolfson Microelectronics WM8740 multi-bit sigma-delta DAC which supports data input word lengths from 16- to 24-bits and sampling rates up to 192kHz. The WM8740 consists of a serial interface port, digital interpolation filter, modulator and stereo DAC in a small 28-pin SSOP package. This DAC gives manufacturers the option of bypassing the WM8740's own digital filter and providing their own external digital filter or, if they use the internal filter, the option of selecting a sharp or slow roll-off, or letting end-users select between the two. It appeared that YBA has elected to use the steeper (slower) of the two internal filters. The WM8740 also offers phase reversal, but YBA has elected not to implement this feature either. YBA has, however, made full use of the YM8740's ability to output fully differential balanced analogue output signals, evidenced by the provision of XLR outputs on the rear panel. (The reason I'm making a point of the fact that the CD100 has a fully differential balanced output is that some CD players that have XLR sockets on their rear, and claim to have 'balanced outputs' are in fact not that at all: instead their (–) and earth pins are simply internally bridged so you're actually getting a bog-standard unbalanced signal, but delivered via an XLR connector… and the same is true of some pre-amplifiers with co-called 'balanced' inputs. Be assured that with the YBA CD100's balanced outputs, you're getting the real McCoy). I was intrigued to see an unusual R-core transformer used in the CD100's power supply. These are a fairly rare design, usually found only in high-end hi-fi components, but are renowned for their efficiency, reliability, low power loss and low leakage flux. I know that famous high-end audio electronics designer John Curl is a fan of the design.

Underneath the YBA CD100 you won't only find the power switch, you'll also discover there are only three feet, rather than the more usual four, and that two of these feet are covered with rubber while the third is made from metal. I had to ask the reason for the different coatings, and was informed the reason was to help control resonances… and controlling resonances is always a good thing. As for there being only three feet, well… that was obvious even to me: it means that if you place the CD100 on an uneven surface (an antique table, for instance), it will be remain completely stable, whereas a CD player with four feet would wobble. Clever fiends, these Frenchies…

The finish on the CD100 is excellent: a superior aluminium front panel, a solid, clean alloy chassis and an excellently-appointed rear panel. It measures 430×372×118mm (WDH) and weighs 5.7kg.

IN USE AND LISTENING SESSIONS

As I said previously, I absolutely loved using the YBA's front panel controls, however because of the usefulness of the extra controls on the remote that aren't on the front panel (particularly input source switching), I ended up using the remote quite a bit. After initially being flummoxed by the usefulness (or not) of the volume control, I had the idea of using the 'Audio' button as a *de facto* 'Mute' button (because the 'Mute' button on the remote doesn't work with the CD100) by setting the variable output level at –80 and then switching back and forth between Vol On (therefore

ABOUT YBA

YBA was founded by French designer Yves-Bernard André (yes, he used his initials to create the company name) back in 1981, while he was still working as a researcher and teacher at Paris' famous 200-year-old *Ecole Polytechnique,* in the Laboratory of Applied Optics, where he co-authored an often-cited paper titled 'Triggering and Guiding of High-Voltage Tesla Coil Discharges by Femtosecond Laser-Induced Plasma Filaments In Air'. Prior to teaching at the *Ecole Polytechnique* André had worked in the hi-fi industry since 1971 for a number of companies, including the very famous French concerns of Goldmund, Pierre Lurné, and Audax. He has also worked as a recording engineer, most famously recording the controversial Russian pianist, actor, novelist, poet and conductor Valery Afanasiev for Denon and, more recently, the French operatic mezzo-soprano Guillemette Laurens for Teldec. In 2009 Shenzhen Shanling Digital Technology Development Company Ltd, one of China's leading high-end audio equipment manufacturers, acquired a majority shareholding in YBA, so that André's title at the company became that of Sound Design Consultant. Although YBA products are now made in China, some of the YBA's high-end products (all models in its Signature Series, for example), have their parts manufactured in France for assembly in China, says André. When YBA was produced entirely in France, and owned by André, he used to tell journalists that he made a point of listening to every single component before it was shipped. So what happens now that YBA manufactures in China? With the Signature products, André continues this tradition, despite the travel involved. 'When production begins Yves Bernard visits and personally tests every Signature piece,' YBA's PR person told me. 'When he is satisfied he signs a certificate which carries the serial number of the individual piece and it is then placed inside the carton.' YBA has a local connection for Australians, because the Chief Executive Officer at YBA is Jacki Pugh, a personality well-known to Australian audiophiles. Pugh co-founded Sonab (Australia) in 1972 before moving on to co-found Concept Audio in 1977. She then established her own company, Architectural Audio, in Australia in 1990 before moving to England where for ten years she acted as the International Sales and Marketing Director at Creek Audio Ltd. She was appointed CEO of YBA in 2012.

–80, or Mute) and Volume Off (0dB). This didn't work, because the CD100 outsmarted me by returning the variable volume level to 0dB whenever I switched the variable volume control to 'Off'. So in the end, pressing 'Pause' on the remote was the best option if I wanted to use the remote to mute the sound for any reason.

One final gripe was that whilst wearing my 'equipment reviewer' hat I found it annoying that I could not directly access tracks on a CD, because the CD100's remote does not have a 0–9 keypad to allow this. Instead, I had to rapidly press the skip track button the requisite number of times required to get to the track I wanted, so that would be 33 times to get to track 33 on one of my special 'sound FX' discs. However, when I was wearing my 'music lover' hat, this lack of direct access didn't worry me, because when I am listening for pleasure, I just put on the CD I want to hear and then listen to the entire CD from start to finish. And in those cases where I did want a specific track, since most CDs have only around a dozen tracks at most, it wasn't overly arduous to use the track skip button to get to the one I wanted. (Another saving grace is that the CD100 skips through tracks very smartly indeed.)

I used the balanced XLR outputs of the CD100 throughout my evaluation, although I did perform a very quick check on the unbalanced RCA outputs just to make sure there were no issues with them (there weren't), which begs the question of which ones you should use if you have a choice. If your amplifier has balanced inputs, I'd recommend using them because in theory, performance should be superior. However, if you don't experience any inference from TV, mobile phones and suchlike in your location, and your amplifier is located within a metre of the CD100, I'd be perfectly happy using standard unbalanced RCA interconnects because in such circumstances their performance will be identical to that of the balanced connections. (It's really only when you experience interference, or you're using a particularly long cable run—several metres or so—that the advantages of balanced connections become significant.)

Delivered a truly engaging, full-bodied sound with perfectly timed bass and a high-frequency response that seemed to extend upwards in frequency forever

As for that sound, the YBA CD100 captured my immediate attention from the very outset of the listening sessions, because right from the start, without any warm-up time at all, it delivered a truly engaging, full-bodied sound with perfectly timed bass and a high-frequency response that seemed to extend upwards in frequency forever, yet without ever sounding too bright, or too 'sharp'. I was also amazed by the clarity and 'wholeness' of the stereo staging, which was magnificent, along with the precision of the imaging.

Getting into dissecting the different areas of the YBA CD100's sonics, I found the bass response of the CD100 was really impressive. After the ethereal 0.28 second intro *American Exterior*, Gruff Rhys' latest release (titled 'American Interior) segues into the title track, which has a beautifully deep and very solid bass line, accompanied by precision drumming, all of which was delivered with stunning realism by the YBA.

The bass became even deeper with the synthesiser intro to *The Whether (Or Not)* and still the CD100 delivered the bass in spades. Again the precision drumming was realised to perfection, so it was easy to hear the perfect timing, and the real drive the CD100 gave to the entire rhythm section. (The bass depth and drive proved to be a highlight with all the discs I played.)

Deep bass features throughout 'American Interior', though it's often accompanied by deliberately-distorted audio effects. It's a credit to the CD100 that its bass was so detailed that it could pick apart the strands, separating the deliberate distortion from the 'merely deep' bass.

Emma Russack is an authentic Australian voice, and I find it great that she doesn't adopt a neutral accent (or worse, put on an American one) and I found her voice rendered perfectly by the CD100 on her latest release 'You Changed Me'.

She's extraordinarily brave with her songs, which are brutally honest, totally heart-felt and most definitely a very long way from the mainstream. The YBA not only accurately reproduced her accented voice, but also the rather thick 'stringy' sound of her guitar. It also very faithfully renders the various excesses of the recording engineers, as they play around with channel delays, dirty reverb, echo and whatever other FX needed dusting off (and all of which were totally unnecessary embellishments).

High frequencies were also great. 'Small Town Misfits' (Jenny Queen) isn't the album I'd have expected of a girl who calls herself a 'country folk singer', but it's great throughout—not a track out of place—and is wonderfully produced by Shane Nicholson, who also adds vocals and (gorgeous-sounding) slide guitar. It's kind of alt-rock and it's kind of fabulous. (I was going to accuse Queen of assuming an American accent until I found she hails from Ohio. I don't know how she ended up here, but Australian music will certainly be the better for it.) High frequencies abound throughout and are perfectly rendered by the CD100—pure, clean and resonant, with not a sharp edge within earshot. Put this album on your 'must buy' album: great lyrics, great melodies, great arrangements, musicianship to die for and excellent sonics into the bargain, as the YBA clearly demonstrated.

CONCLUSION

European sonic sensibilities matched with expert (and cost-effective) Chinese engineering have delivered a unique CD player (that's also able to be used as a DAC… including for computer audio) that most definitely must be on your 'must listen to' list. A stand-out CD player in every respect.

greg borrowman

LAB REPORT ON PAGE 36

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LABORATORY TEST REPORT

The frequency response of the CD section was excellent, as you can see from Graph 17. (Do take into account the extremely expanded horizontal scale, where each division is only 0.2dB.) Further non-automated testing, which allowed exploration of the player's response below 20Hz, revealed that overall, the frequency response extends from 2Hz to 20kHz ±0.09dB. The response of the DAC section, tested using a 24-bit, 48kHz test signal was even flatter and more extended.

Channel separation (CD) was excellent also, as you can see from the tabulated results, which show measurements of 136dB at 16Hz, 122dB at 1kHz and 97dB at 20kHz. These are excellent results and far more than will be necessary to result in perfect channel separation and equally perfect stereo imaging. Channel separation via the DAC input (Graph 19) was essentially the same, though there were small differences measured between the left and right channels. Channel balance was measured at 0.007dB, meaning it's not only almost perfect, but also more accurate than almost any amplifier you're likely to run across, so your speakers will be the limiting factor in achieving accurate balance, followed by your amplifier. The YBA's channel phase accuracy was also superb: 0.02° at 16Hz, 0.05° at 1kHz and 1.03° at 20kHz.

If you use the balanced outputs, you'll see a maximum voltage of around 3.9 volts, whereas if you use the unbalanced outputs, maximum output voltage will be around 1.9 volts. Both are ideal for their respective connection types.

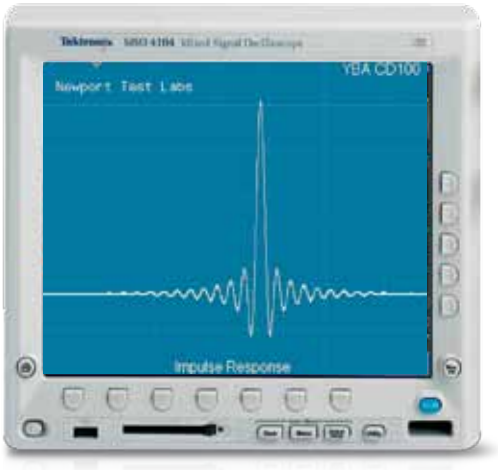
CD distortion at 1kHz for a 0dB signal showed minor distortion components whose levels trended downwards with increasing frequency, and petered out at the 9th harmonic. The highest harmonic was the (good-sounding) second, at –95dB (0.0017%). The third and fourth harmonics were around 105dB down (0.0005%). The remaining harmonics were closer to 120dB down (0.0001%) except for the 9th at –125dB (0.00005%). This is all shown in Graph 1. Distortion became lower with decreasing recorded level, until at –20dB recorded level (Graph 5), all distortion components were more than 120dB down (0.0001%). Even at –60dB (Graph 6) all distortion components were still more than 120dB down, which also

YBA Heritage CD100 CD Player — Analogue Test Results

Analogue Section	Result	Units/Comment
Output Voltage (Balanced Outputs)	3.9826 / 3.9793	volts (Left Ch/ Right Ch)
Frequency Response	2Hz – 20kHz =/–0.09	dB (20Hz – 20kHz)
Channel Separation	136 / 122 / 97	dB at 16Hz / 1kHz / 20kHz
THD+N	0.004	@ 1kHz @ 0dBFS
Channel Balance	0.007	@ 1kHz @ 0dBFS
Channel Phase	0.02 / 0.05 / 1.03	degrees at 16Hz / 1kHz / 20kHz
Group Delay	180 / 5.29	degrees (1–20kHz / 20–1kHz)
Signal-to-Noise Ratio (No Pre-emph)	100 / 107	dB (unweighted/weighted)
De-Emphasis Error	Not Fitted	at 1kHz / 4kHz / 16kHz
Linearity Error @ –60.00dB / –70.00dB	0.01 / 0.04	dB (Test Signal Not Dithered)
Linearity Error @ –80.59dB / –85.24dB	0.02 / 0.05	dB (Test Signal Not Dithered)
Linearity Error @ –89.46dB / –91.24dB	0.07 / 0.06	dB (Test Signal Not Dithered)
Linearity Error @ –80.70dB / –90.31dB	0.04 / 0.10	dB (Test Signal Dithered)
Power Consumption	5.37 / 9.91	watts (Standby / On)
Mains Voltage During Testing	235 – 250	(Minimum – Maximum)
Digital Section		**Units/Comment**
Digital Carrier Amplitude	102mV	Audioband
Digital Carrier Amplitude	1.33 / 2.66	Differential / Common Mode
Audioband Jitter	1.6 / 0.004	nS (p-p) / UI (p-p)
Data Jitter	1.9 / 0.01	nS (p-p) / UI (p-p)
Deviation	5.6	ppm
Frame Rate	44099.755	
Eye-Narrowing (Zero Cross)	3.3 / 0.018	nS (p-p) / UI (p-p)
Eye-Narrowing (200mV)	13.0 / 0.074	nS (p-p) / UI (p-p)
Absolute Phase	Normal	Normal / Inverted
Bit Activity at Digital O/P	16	Where Fitted

YBA Heritage CD100 DAC SECTION (AES-17 Standard using 48kHz/24-Bit)

Digital Section	Result	Units/Comment
Out of Band Spurious Components	–110.381dB	
Suppression of Imaging Components	–97.530dB	(Worst Case)
Level Dependent Logarithmic Gain	–1.114dB	
Intermodulation Distortion (1)	–96.097dB	18kHz/20kHz 1:1 Ratio
Intermodulation Distortion (2)	–109.478dB	41Hz/7993Hz 4:1 Ratio
Low Level Noise Modulation	+4.763dB	Worst Case
Signal-to-Noise Ratio	–110.333dB	CCIR-RMS weighting
Non-Linear Interchannel Crosstalk (a)	–115.310dB	3kHz (2nd-order ref 17kHz/20kHz)
Non-Linear Interchannel Crosstalk (b)	–116.640dB	6kHz (3rd-order ref 17kHz/20kHz)
Non-Linear Interchannel Crosstalk (c)	–116.177dB	10.040kHz (2nd re 40Hz/10kHz)
Non-Linear Interchannel Crosstalk (d)	–108.051dB	10.080kHz (3rd re 40Hz/10kHz)
Absolute Phase	Normal	Normal/Inverted



means they were 60dB below the test signal at –60dB.

Distortion performance down at –90dB was absolutely outstanding as you can see from Graph 9 (measured with an undithered test signal) and Graph 10 (with a dithered test signal). In Graph 9 you can see some distortion components caused by LSB issues, but they're all more than 110dB down (0.0003%) and the noise floor drops below –140dB. Once dithered, the distortion components disappear entirely, but the noise floor increases as a direct result of the dithering, though at more than 130dB down, it is far lower that the noise floor of even the very best power amplifiers, and so would be completely inaudible. It constantly amazes me when I see this level of performance from a standard CD.

The action of the sampling rate converter is best shown in Graph 11 (SRC on) and Graph 12 (SRC off) both measured with the same 20kHz test signal. You can see that with the SRC off, the noise floor is between 120dB and 130dB down pretty much right across the spectrum from 0Hz to 48kHz, plus there's an 'echo' at the relatively low frequency of 24.1kHz (though it's 102dB down), as well as two sampling artefacts up around 40kHz. When the SRC circuitry is active (Graph 11) you can see the noise floor below 20kHz drops by more than 10dB, to flat-line down near –140dB, while above 20kHz, it drops below 140dB, disappearing from the graph entirely. That 'echo' at 24.1kHz also disappears entirely, though the two higher-frequency sampling artefacts remain, their levels completely unaffected.

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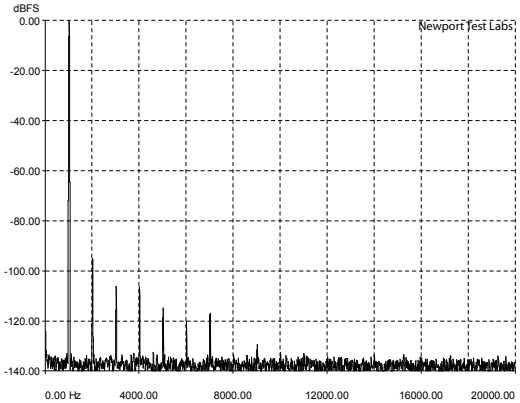
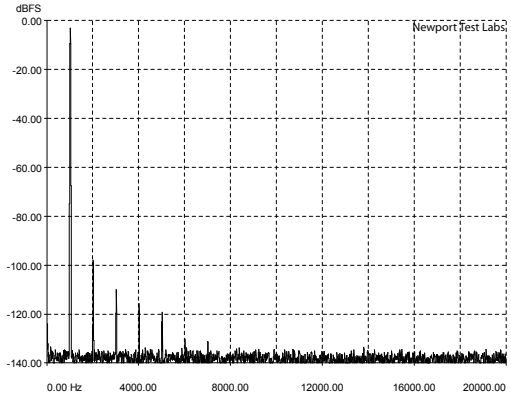
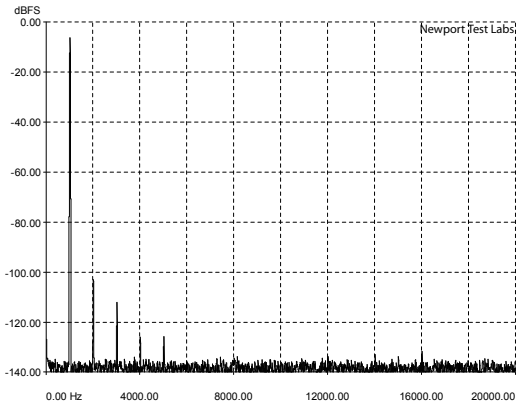


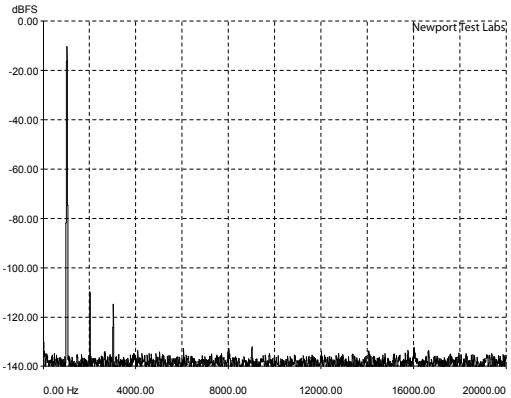
Graph 1. THD @ 1kHz @ 0dB recorded level. [YBA Design Heritage CD100 CD Player/DAC]



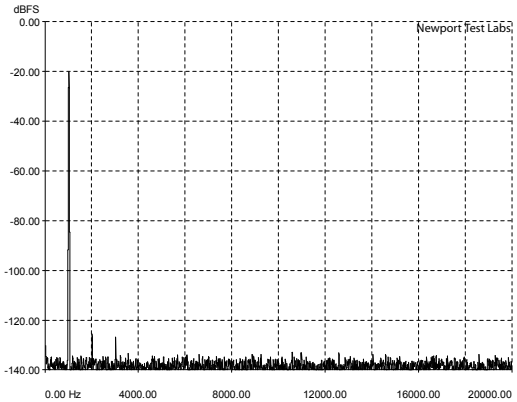
Graph 2. THD @ 1kHz @ –1dB recorded level. [YBA Design Heritage CD100 CD Player/DAC]



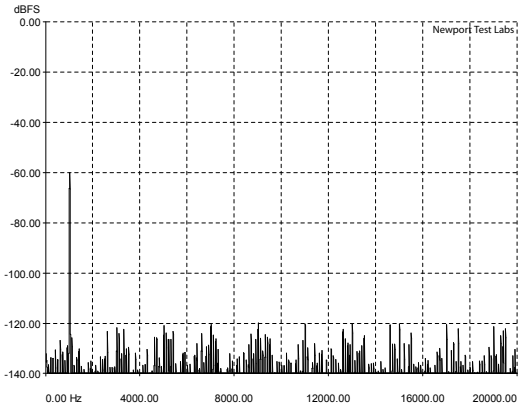
Graph 3. THD @ 1kHz @ –3dB recorded level. [YBA Design Heritage CD100 CD Player/DAC]



Graph 5. THD @ 1kHz @ –10dB recorded level. [YBA Design Heritage CD100 CD Player/DAC]



Graph 5. THD @ 1kHz @ –20dB recorded level. [YBA Design CD100 CD Player/DAC]



Graph 6. THD @ 1kHz @ –60dB recorded level. [YBA Design CD100 CD Player/DAC]

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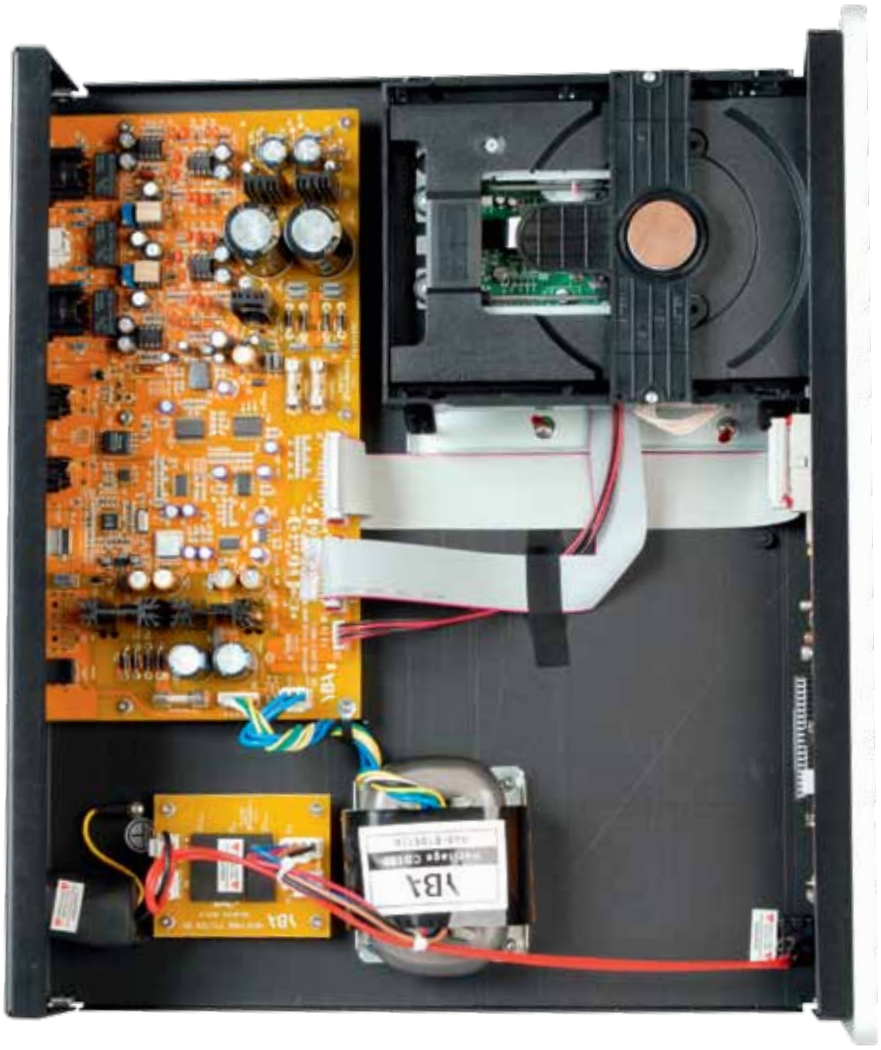
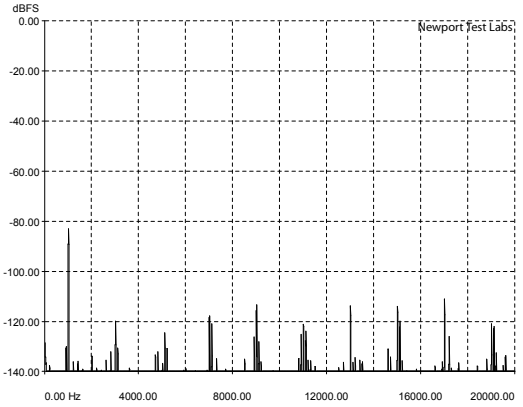
The signal-to-noise ratio of the YBA CD100 was outstanding, with *Newport Test Labs* measuring 100dB unweighted and 107dB weighted. Note that these measurements were recorded not with 'digital black' but with a real test CD, so they're realistically what you could expect during playback. Also excellent was linearity error, as you can see from the tabulated results. Interestingly there were very minor deviations all the way from –60dB to –90.31dB, but these are so small they would be completely undetectable. As with an increasing number of newly-designed CD players, the YBA CD100 is not fitted with a de-emphasis circuit, so *Newport Test Labs* could not check for de-emphasis error. Not having the circuit means that some discs manufactured before 1990 may play back a little 'bright' in the high frequencies, but there are no other implications.

Measurements on the DAC section of the CD100 show very good performance that will be bettered only by the finest stand-alone high-end DACs, while the digital output when decoding CDs showed the CD100 will provide a good signal for an external DAC. The power consumption of the YBA CD100 in standby mode (5.37-watts) was by no means high, but it was higher than the Australian standard for standby consumption, which requires standby consumption of less than 1-watt.

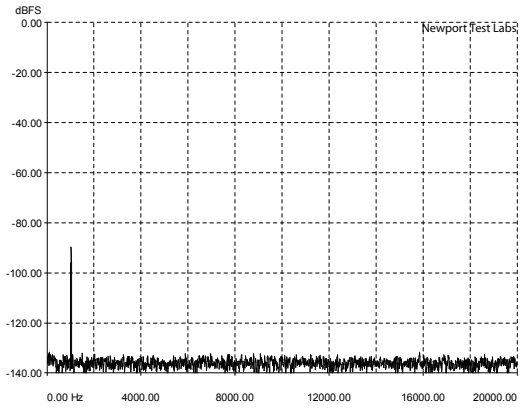
The measured performance of the YBA CD100 was outstanding. Although the DAC section is no slouch, it was the CD playback performance that is undoubtedly the star of the show here, particularly with the sampling rate conversion circuitry active. Brilliant results all 'round. ***Steve Holding***

[Editor's Note: *Just in case you're wondering what happened to the 'missing' graphs, there were so many that we have created a special online version of this review to include them. This is available free on-line at www.avhub.com.au. We have kept the numbering of the full sequence of graphs in this article in order to correctly match up with the complete information.* G.B.]

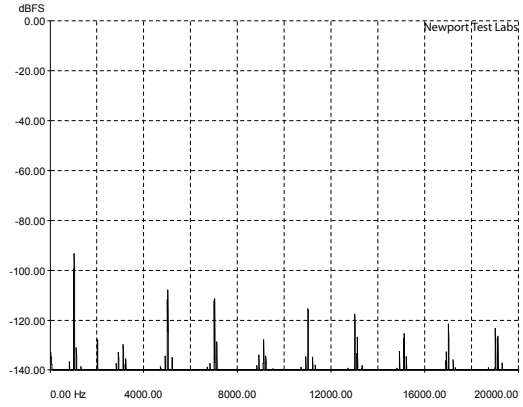




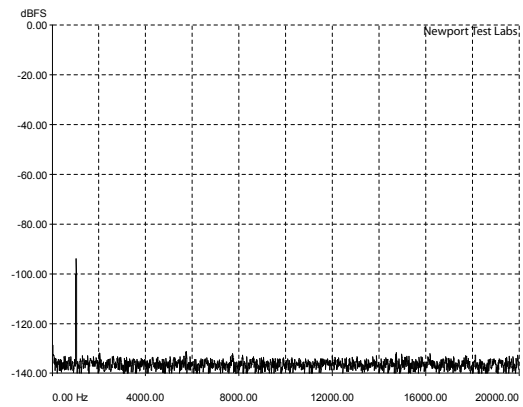
Graph 7. THD @ 1kHz @ –80.59dB recorded level. (No dither) [YBA CD100 CD Player/DAC]



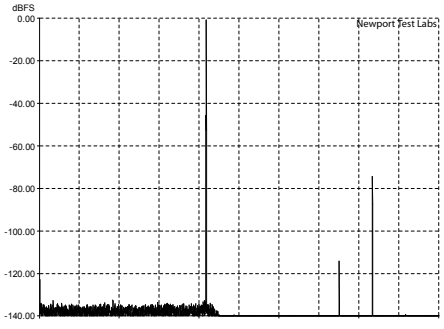
Graph 8. THD @ 1kHz @ –80.70dB recorded level. (With dither) [YBA CD100 CD Player/DAC]



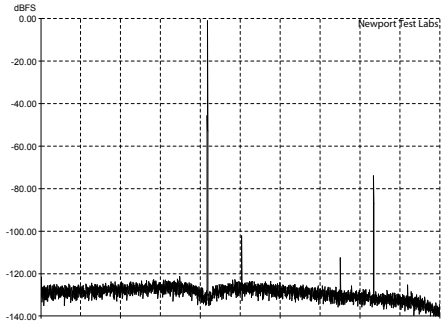
Graph 9. THD @ 1kHz @ –91.24dB recorded level. (No dither) [YBA CD100 CD Player/DAC]



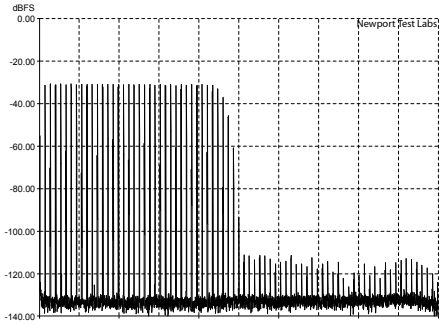
Graph 10. THD @ 1kHz @ –90.31dB rec. level. (With dither) [YBA CD100 CD Player/DAC]



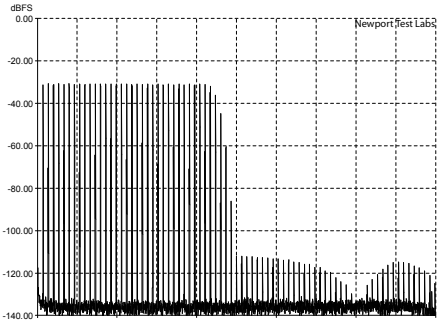
Graph 11. THD @ 20kHz @ 0dB recorded level. SRC ON. [YBA Design CD100 CD Player/DAC]



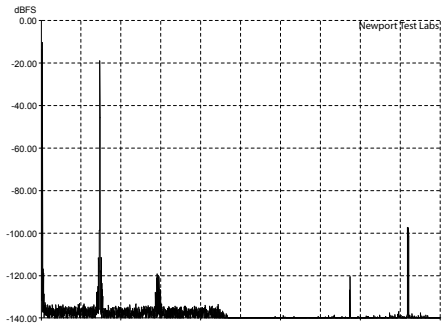
Graph 12. THD @ 20kHz @ 0dB recorded level. SRC OFF. [YBA CD100 CD Player/DAC]



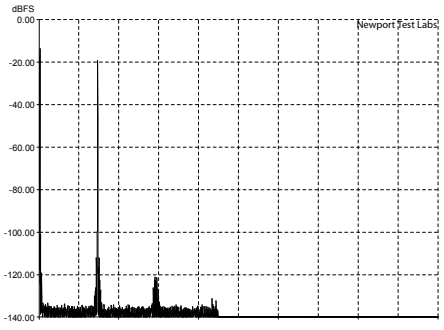
Graph 13. Impulse Train. (One maximum amplitude positive sample every 70 samples (630 pulses per second). SRC OFF. [YBA Design Heritage CD100 CD Player/DAC]



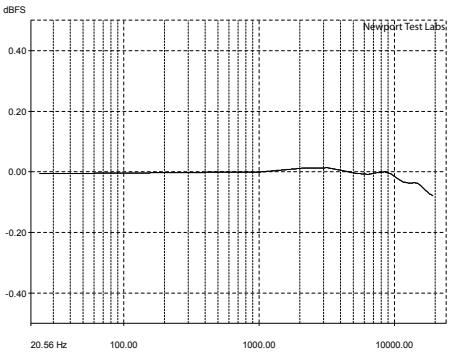
Graph 14. Impulse Train. (One maximum amplitude positive sample every 70 samples (630 pulses per second). SRC ON. [YBA Design Heritage CD100 CD Player/DAC]



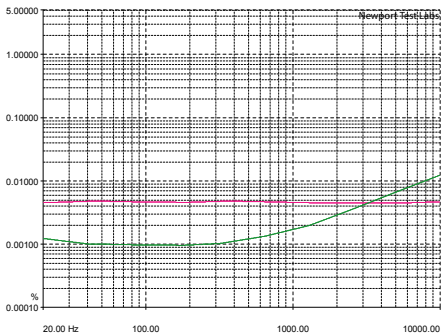
Graph 15. SMPTE Distortion (Intermodulation) @ 0dB using 60Hz and 7kHz test signals in 4:1 ratio. SRC OFF. [YBA Design Heritage CD100 CD Player/DAC]



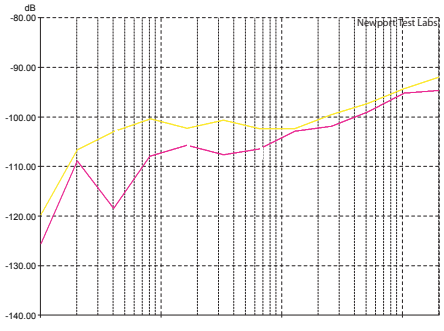
Graph 16. SMPTE Distortion (Intermodulation) @ 0dB using 60Hz and 7kHz test signals in 4:1 ratio. SRC ON. [YBA Design Heritage CD100 CD Player/DAC]



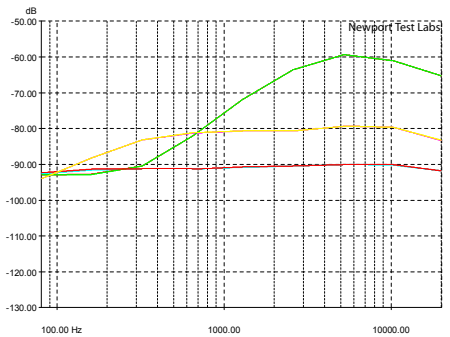
Graph 17. Frequency Response at @ 0dB recorded level. [YBA CD100 CD Player/DAC]



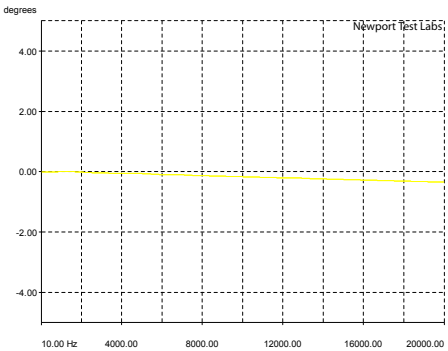
Graph 18: Total Harmonic Distortion & Noise (THD+N) vs Frequency at –20dB (Green Trace) and –1dB (Pink Trace). Digital input. 24-bit/48kHz. [YBA CD-100 CD Player (DAC Section]



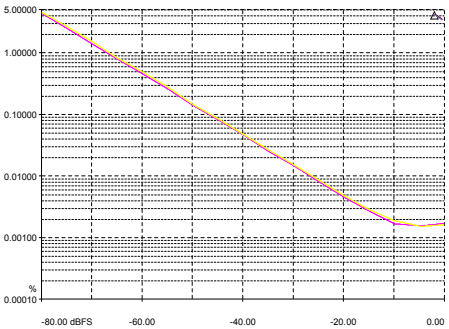
Graph 19: Channel Separation re 0dB. Digital input, 24-bit/48kHz. [YBA CD-100 (DAC Sect.)]



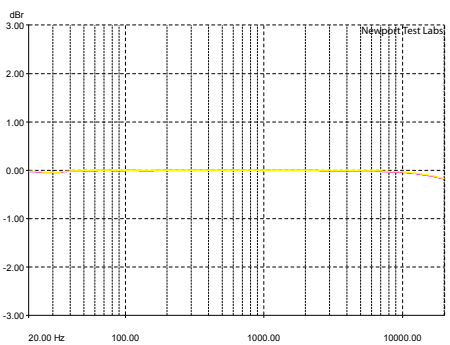
Graph 20. Jitter Susceptibility. [YBA Design Heritage CD100 CD Player/DAC]



Graph 21. Phase Response. DAC input. AES 48kHz/24-bit. [YBA Design CD100]



Graph 22. THD+N vs Level. AES 24-bit/48kHz. [YBA CD100 CD Player/DAC]



Graph 23. Frequency Response, left and right channels. AES 24-bit/48kHz. [YBA CD100]

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